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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,714	03/21/2006	David Lowell McNeely	PU030264	3403
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EXAMINER				
SHAI, TANMAY K				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/572,714

**Applicant(s)**

MCNEELY, DAVID LOWELL

**Examiner**

TANMAY k. SHAH

**Art Unit**

2611

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03/21/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5 - 9, 11, 13 - 17, 19 - 20 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 10, 12 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB08)
- Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This communication is in response to the Application No. 10/572,714 filed on 3/21/0. Claims 1 – 20 have been examined.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,3, 5 - 9, 11, 13 - 17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Webster et al. (US 2003/0058952)** in further view of **Beck et al. (US 2002/011825)**.

Regarding claim 1, Webster teaches a digital radio frequency (RF) transceiver circuit comprising:

circuitry that is adapted to select between a transmitter input signal and a receiver input signal (i.e. **control logic 206 of transmitter of Fig. 2 or 706 of receiver of Fig. 7**, It is noted that the RF system 202 and the control logic 206 may be combined with the RF system 702 and the control logic 706, and that the Baseband transmitter 200 and the Baseband receiver 700 may both be coupled to the combined RF system and control for implementing an RF transceiver according to an embodiment of the present invention, so it could be transceiver as claimed, page 7, paragraph 53);

filter (i.e. **Mixed Carrier Digital filter, 219 of Fig. 2 or CMF, 719 of Fig. 7**) that are adapted to receive either the transmitter input signal or the receiver input signal and to produce either a filtered transmitter signal or a filtered receiver signal (i.e. **as mentioned above it could be implemented in RF transceiver system, so if the transmitted signal is selected by control logic it will use the filters 219 of Fig. 2 and if the received signal is selected by control logic it will use the filters 719 of Fig. 2, page 5, paragraph 43 and page 7, paragraph 54**);

circuitry that alternatively receives the filtered transmitter signal or the filtered receiver signal and produces a modulated output (i.e. **modulation, As shown in Fig. 4A and 4B, page 6, paragraph 47**) and a demodulated output (i.e. **phase rotator, it acquires carrier packets or signals, page 7, paragraph 53 and page paragraph 54**). However does not specifically disclose that it has plurality of filters.

Beck teaches receiver with plural FIR filters (i.e. **FIR filter, 511 of Fig. 5**). It would have been obvious to one of the ordinary skilled in the art at the time the invention was made to combine the teachings of Webster with Beck. One would be motivated to combine these teachings because in doing so it will filter each carrier signal with different filter which will make process faster.

Regarding claim 3, Webster with Beck teaches claim 1,

Beck further teaches wherein the plurality of filters comprises finite impulse response (FIR) filters (i.e. **FIR filter, 511 of Fig. 5**).

Regarding claim 5, Webster with Beck teaches claim 1.

Webster further teaches wherein the RF transceiver circuit comprises a portion of an orthogonal frequency division multiplexing (OFDM) transceiver (i.e. **In a particular embodiment, a selected one of Binary Phase Shift Keying (BPSK) and Quadrature Phase Shift Keying (QPSK) is used for modulation of the single-carrier segment and orthogonal frequency division multiplexing (OFDM) is used for modulation of the multi-carrier segment of a mixed carrier signal, page 2, paragraph 10).**

Regarding claim 6, Webster with Beck teaches claim 1.

Webster further teaches wherein outputs from at least a portion of the plurality of filters are delivered as inputs to a multiplexer (i.e. **MUX, 213 of Fig. 2 or 709 of Fig. 7)** that provides the modulated output (i.e. **modulation, page 5, paragraph 40 and page 7, paragraph 52).**

Regarding claim 7, Webster with Beck teaches claim 1.

Webster further teaches wherein the modulated output is processed by a digital-to-analog (D/A) converter (i.e. **DAC, 215 of Fig. 2)** at a frequency four times greater than a frequency of a carrier of the modulated output (i.e. **frequency to DAC is 44MHz and the input is 11MHz, which is four times greater, Fig. 2).**

Regarding claim 8, Webster with Beck teaches claim 1.

Beck further teaches wherein the receiver input signal is processed with a delay line having a plurality of output delays (i.e. **Fig. 2, N-1 delay elements 201, including delay elements 201-2 through 201-N, page, paragraph 30**), each of the output delays corresponding to one of the plurality of filters (i.e. **output is from delay tap of filters, page 3, paragraph 30**) and wherein each of the plurality of filters has a different delay characteristic that compensates the associated output delay (i.e. **Each symbol of the baseband demodulated received training signal is initially supplied to the first delay element, delay element 201-2, as well as to the first multiplier, multiplier 203-1. For each clock cycle the symbol stored in each delay element is supplied to the next delay element in the delay chain formed by delay elements 201 until delay element 201-N, after which the symbol exits the filter. The symbol stored in each of delay elements 201 is multiplied, using a corresponding one of multipliers 203, by a coefficient value. Additionally, the symbol currently being supplied as an output by demodulator 109 is multiplied by a coefficient using multiplier 203-1. The various products produced by multipliers 203 are summed using adders 205 and an output of the FIR filter is supplied from adder 205-N, page 3, paragraph 30**).

Art Unit: 2611

Regarding claim 9, the transceiver has substantially same limitations as claim 1, thus the same rejection is applicable.

Regarding claim 11, the transceiver has substantially same limitations as claim 3, thus the same rejection is applicable.

Regarding claim 13, the transceiver has substantially same limitations as claim 5, thus the same rejection is applicable.

Regarding claim 14, the transceiver has substantially same limitations as claim 6, thus the same rejection is applicable.

Regarding claim 15, the transceiver has substantially same limitations as claim 7, thus the same rejection is applicable.

Regarding claim 16, the transceiver has substantially same limitations as claim 8, thus the same rejection is applicable.

Regarding claim 17, the transceiver has substantially same limitations as claim 1, thus the same rejection is applicable.

Regarding claim 19, the transceiver has substantially same limitations as claim 3, thus the same rejection is applicable.

Regarding claim 20, the transceiver has substantially same limitations as claim 7, thus the same rejection is applicable.

***Allowable Subject Matter***

4. Claims 2, 4, 10, 12 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANMAY K. SHAH whose telephone number is (571)270-3624. The examiner can normally be reached on Mon-Thu (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. k. S./

Examiner, Art Unit 2611

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611